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Teachers of adults should be aware of the fact that although learning ability can decline with disuse, a person's basic learning capacity does not change in the adult years. Among major sensitivities adult educators need, however, are a keen awareness of adult concerns for place and circumstances of educational facilities, an effective working relationship with students, and careful planning of both classroom procedures and evaluation techniques. (se)

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TEACHING ADULTS

THE PENNSYLVANIA STATE UNIVERSITY
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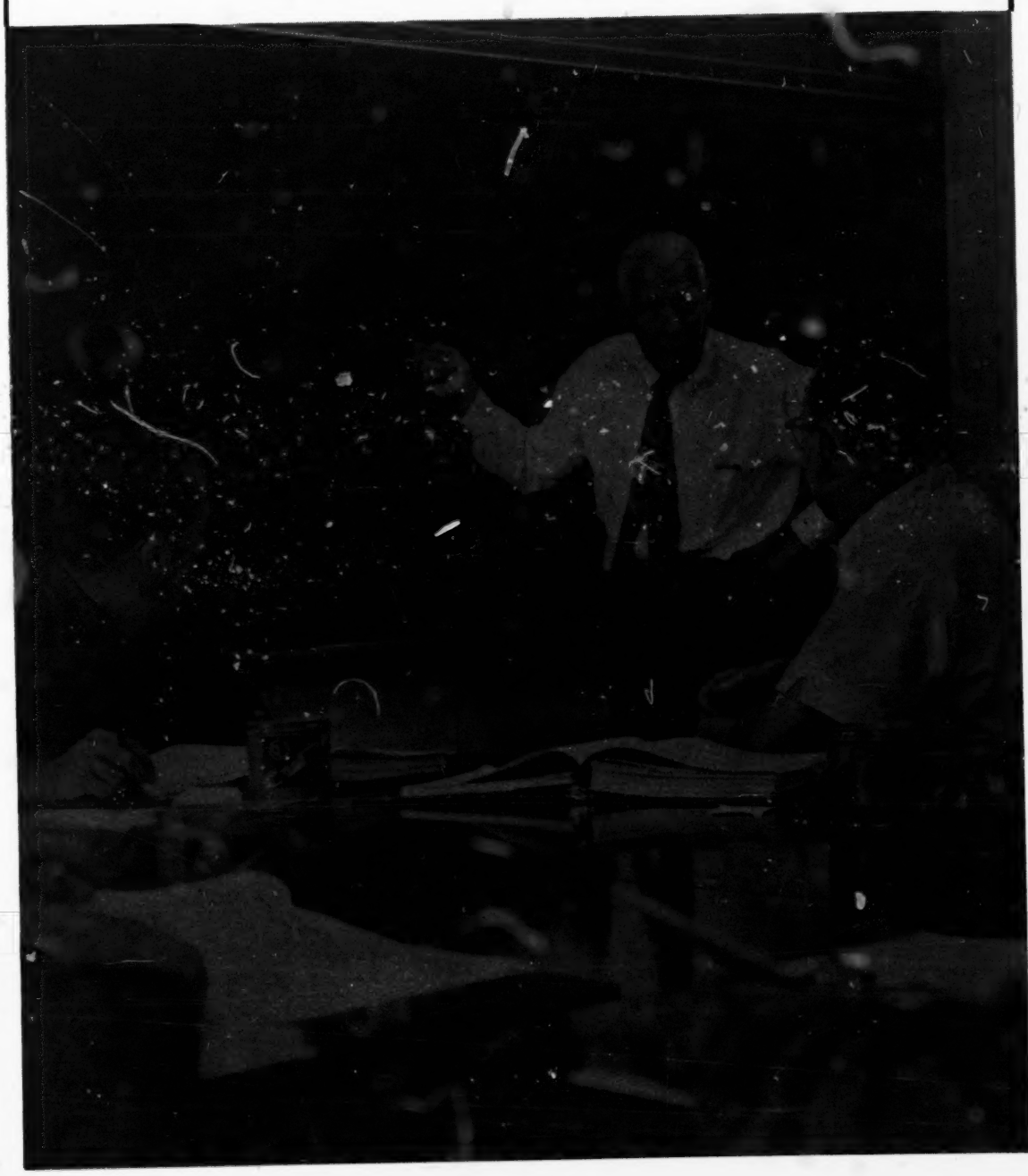

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TEACHING ADULTS

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June 1968

"Education, once the peculiar privilege of the few, must in our best earthly estate become the valued possession of the many. It is a natural and inalienable right of human souls. The gift of imagination, of memory, of reason, of invention, of constructive and executive power, carries with it both prerogative and obligation. No man dare with impunity surrender, as to himself, this endowment, nor deny to his neighbor the right and obligation which it involves."

John H. Vincent
The Chatauqua Movement (1886)

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ON TEACHING ADULTS

Because a teacher is human, because human beings are the most complex things we know, and because a classroom holds many such complex beings, teaching lends itself to an almost bewildering, and often seemingly contradictory, variety of analyses.

Some people look at teaching and learning as a set of interactions between a teacher and one or more students, the way people behave toward each other when they function together in a classroom. Sometimes these interactions are interpreted psychologically as ways of controlling responses. Sometimes they are cataloged as types of discourse between teacher and student. Sometimes the confrontation between teacher and student is regarded as an encounter between forces of dominance and submission, a playing out of roles of strength and weakness.

Some people see the teaching-learning process as an input-output-feedback information cycle. And others often characterize teaching as an artistic performance, to be judged as a critic judges any other artistic endeavor — and perhaps to be consumed by the student as he would consume any other work of art.

This brief summary just barely represents, and certainly does not exhaust, the ways different people choose to think about teaching and learning. But, brief as it is, it's enough to make the point.

We gain little by debating which way of looking at teaching is best, and we gain nothing at all by asking which is right or wrong. We may as well ask if life is a "race," a "dream," a "tragedy," or a "comedy." If we know anything of life, we know it is all these things and more. If we remember that teaching involves groups of complex beings trying together to achieve complex goals, we know that teaching may profit from all the above analyses, and more besides.

The variety among them condemns none of them. There is no harm in using figures of speech, models or analogies to talk about teaching, as long as we employ them with reasonable rigor and accept them all as equally valid contributions to an ultimate, though perhaps ultimately unachievable, definition of what happens when a teacher and students address themselves to the task of learning. The goals of teacher and student alike are to obtain understanding of how and why things are as they are, to achieve skill in getting things done, and to develop attitudes that will help in judging what things

need doing when and for what purposes. Any analysis that contributes toward these ends may properly be applied to teaching.

Beyond these generalizations there are some particulars that apply specifically to the teaching of adults. One of them is a matter of attitude.

As Mortimer J. Adler points out in *Great Issues in Education,* we tend to think of education (and therefore of teaching) as something done to the young. There is no place, in this view, for the teaching of adults, who presumably have already been "educated." Putting adults back into classrooms seems, at best, superfluous, and perhaps even frivolous. Adult education, judged this way, becomes a pointless adventure at the fringes of real adult life, or it is frankly remedial — something for the "underprivileged" (always somebody else!) who were not "taught" right in the first place.

As a teacher of adults, you should first examine your own attitude toward the educating of adults. If you do, you should realize that, in a broad sense, youth itself is a barrier to education. Learning, after all, is not simply acquiring new information. It may consist of gaining new insights into old information. And even when we do acquire new data, we still must fit it in with the old, integrate it into our previous experience, before we have "learned" it. Whatever the virtues of youth, not all of the advantages, in education at least, fall to the young. The adult student starts out with more experience, and he has other advantages, too, as we shall see.

You, the teacher, will want to acquaint yourself with these adult capacities and adapt your teaching to them. You will have to remember, first of all, that your students are adults and will demand the courtesy due their years. The adult-child relationship between teacher and student that often prevails in elementary, secondary and even college classrooms will work only mischief among adults. If they accept the status of "child," they give up the benefits of their maturity, and you lose the advantage of teaching adults. If they decline to play "pupil" to your "teacher," the resulting hostility or apathy will banish learning.

You will need to remember, too, that most adult students are volunteers. They are in your classroom because they want to be there and because they expect something of value from you in return for the time they are devoting to class. You will feel the pressure

their expectations put upon your skill as a teacher, but you will enjoy the opportunity their motivation offers you to exercise that skill.

And, finally, you will enjoy the sense of partaking in a vital and unending human endeavor. As long as human beings remain able to modify their behavior according to their circumstances they retain the capacity and the necessity of learning. Education is society's answer to that universal human challenge, and adult education's task is to make learning a lifelong enterprise.

Such, then, is the path to the future along which you, the teacher, guide the mature footsteps of your adult students. Such, then, is your own challenge and your privilege.

ON THE ADULT STUDENT

Many teachers meet their first class of adult students uneasily, wondering what to expect. They wonder if adults can perform adequately as learners. They know adults differ from children, but often they don't know how much or in what ways.

Adults are different from children, not only in body characteristics but also in learning histories, reaction speeds, attitudes, values, aspirations, anxieties, motivation, economic status, responsibilities, and so on. Some of these differences result from changes in physical state, more from the continuing influence of experience. But we do not lose the ability to learn as we grow older. What we choose to learn and how we go about learning it may alter with the years, but the basic capacity for learning persists.

Studies have shown, for example, that the speed of purely physical reaction does slow with age, but for most learning fast reflexes are unimportant. Other studies have revealed that, although older people are generally slower in neuro-muscular skills and physical movements, those who are most accurate are also the fastest. This relationship between accuracy and speed does not prevail among young people — they may be accurate and slow, inaccurate and slow, accurate and fast, or inaccurate and fast.

General learning ability does not decline between the ages of 20 and 60. The youth who is bright does not become dull in later years. A person of 60 can learn the same things he could learn at 20, but his motivation may change. He may decide he doesn't

care to learn the same things, or anything. Worst of all, he may take seriously the adage about old dogs and new tricks. Whatever the case with dogs, adult education has long since proved that older people can indeed learn new tricks if they want to and their health permits.

Age really tells us little about the individual's ability to learn. Performance on intelligence tests (and related materials) is predicted more accurately by the subject's years of school completed than by his age. And the scores of older people actually go up on mental ability tests that involve experience, practice and judgment. Healthy older people, like good wine, usually improve with age.

Results in the adult education classroom confirm the tests. John R. Hackett and Hollis B. Farnum report in the Spring 1963 issue of *Adult Education* that " . . . the average evening student in college-level courses has a generalized academic aptitude which is not only above the average for the general population, but is also at least equivalent to that of the average ability of his day-time counterpart . . . most educators agree that he is more highly motivated." And the National Survey of University Adult Education Students found in 1964 that the achievement of adults in college-level courses — specifically, their course grades — was not related to their age.

It is true, of course, that learning ability, like any other ability, can decline with disuse, and the teacher of adults must bear that possible, though usually temporary, decline in mind in his dealing with older students. Happily, however, learning ability revives when needed. We are still uncertain, admittedly, how fast it recovers, but the common-sense experience of the adult classroom has demonstrated that it does recover quickly in most cases.

The losses in sight and hearing that often accompany increasing age cannot, unfortunately, be regained in like measure. Such losses may indeed interfere with study and learning, but they can usually be compensated for with good lighting, large and legible writing and illustration, and measured speech clearly spoken by the teacher.

Either for reviewing the will and the ability to learn or for compensating physical losses that affect learning, you, the adult teacher, will want to do everything you can to provide the most stimulating and comfortable environment possible. And doing everything you can means paying close attention to even the homely details of the physical setting in which you will teach and your students will learn.

THE PHYSICAL SETTING

Our concern with physical setting encompasses both the location of an adult education venture within a community and the classroom environment at that location.

Adults have shown a remarkable sensitivity to the location of their classes. College-trained adults interested in furthering their professional advancement or simply in enriching their collegiate background may have no objection to attending night classes in the same rooms occupied by their children during the day. A man or woman enrolled in an adult literacy program, or a high school dropout returning as an adult to the pursuit of his diploma, may be reluctant to risk adult dignity in a place where children come to learn. Such students may be more comfortable, and learn better, at a downtown store-front location. On the other hand, all kinds of students may perceive the public school or library as a suitable place to pursue learning in a community that has traditionally operated a broad-scale adult education program in its schools.

Another important aspect of location is access to transportation and parking. In some cases, particularly for urban classes, bus routes are important to the adult student, who may have neither the inclination nor the energy, after a full day's work, to trudge half so far as he cheerfully skipped to school as a child. And, since the automobile has become such a leading feature of American life in town or out, adequate adjacent parking may often determine the success or failure of an adult education program.

Whatever kind of student is involved, and wherever the class is located, the teacher of adults needs a keen sensitivity to adult concerns for place and circumstance. The same experience that makes adults such rewarding students in some respects has scarred them in other ways, so they often chafe more readily than children. And as adults they have lost the habit of deferring to authority on questions of physical and mental comfort. Their adult education setting must pass a variety of tests before they tolerate it as neutral, much less accept it as positive.

Let's consider a few aspects of setting which, despite their obvious importance, don't always get the attention they deserve.

Lighting needs careful attention in any learning environment, especially for adults whose older eyes may have lost the acuity of youth. Too much glare or too few foot-candles can strain adult eyes and reduce learning. The careful teacher will check out his

classroom lighting in advance of the first class, and make noises if it is inadequate.

Uncomfortable seating has ended more than one adult education venture short of its goal. Squeezing adults into children's desks is a certain invitation to mutiny or defection, and seating bolted rigidly together or to the floor may rob an adult class of needed flexibility in room arrangement, for face-to-face discussions, buzz groups, and the like. The alert teacher acts ahead of time to see that his class's needs are met. With any mode of seating, the teacher will also tactfully take into account the special needs of the nearsighted and the hard-of-hearing, the overly shy and the unusually ebullient students.

Competing against extraneous noise has more than once defeated a teacher who had planned his lesson carefully, arranged his materials well, and otherwise assured himself of good results. Anywhere you teach you may encounter the occasional disturbing noise that cannot be anticipated and must be tolerated temporarily. But chronic sources of distracting noise should be identified and eliminated at the outset of a course.

Nothing makes an adult class so restless or so drowsy as an underheated or overheated classroom. And few things in the physical environment influence concentration and learning so directly as temperature. When chills or a heatwave invade the classroom, the teacher should protect his class and, if necessary, protest on its behalf.

Motivated adults have repeatedly demonstrated that they can learn under a variety of conditions, including some adverse ones. But studies have also shown that adverse, distracting conditions can reduce learning. The good teacher first identifies and corrects as many distractions as possible, then makes the best of the remainder.

THE MENTAL SETTING

The teacher of adult students who wants to establish an effective working relationship with his class will carefully abide by the courtesies customarily observed among adults.

Whether vocational or purely avocational interests have led the individual adult students into the classroom, they all take those interests seriously. The good teacher will respect the seriousness of their varied purposes, and he will take pains to show that respect.

His class, he will find, will gauge its response according to his conduct, so the entire fate of the course may hinge on how deeply he feels and how clearly he displays his concern for his students.

The very fact of a teacher and adult students coming together in the classroom should remind the teacher that adult education sees man as ever improvable, and always worth the effort. That adult students voluntarily spend their leisure time, and usually their own hard-earned money, attests their dedication to that proposition.

At the same time, the same students often display a contradictory diffidence toward the conduct and the goals of the course. The experienced teacher of adults will recognize this paradox, and the new teacher should not be upset by it. Compared to more uninhibited youngsters, adult students tend to be both more self-conscious and less self-confident, partly probably because many of them have been away from the classroom for a long time and partly because, as adults, they feel their dignity more at stake. They are often unsure of their ability to learn, and they sometimes fear they won't be able to stick it out. Adult re-entry into the role of student is not easy.

The teacher's proper response to this paradoxical behavior is to recognize its very human basis. Each student represents a distinct set of needs and expectations. The teacher will need to tailor his approach to each student accordingly. But the basic approach will always combine a balanced measure of respect and reassurance.

Finally, every class represents a highly characteristic and dynamic organism which will leave the mark of its distinctive experience on each member. The teacher will find that his role varies from class to class as the personalities of the classes vary. Each new class will require the full exercise of the teacher's capacities as a teacher and as a human being, but the proportions will differ. Whatever role the teacher plays, however, his function is central and his responsibility is unique.

BEGINNING TO TEACH

BE PREPARED

Being prepared is vital to successful teaching at any level. It is especially important to the teacher of adults. Mature students devoting their own time and money to further their education typically arrive for class fully motivated and ready for work. Their

readiness is, in fact, one of the most rewarding aspects of adult teaching — the teacher rarely needs to spend precious class time convincing students to take the course seriously, thus teacher and students together can address themselves promptly and profitably to the real work of learning.

But, precisely because mature students know why they are in the classroom and what they want to take from it, the teacher of adults must be prepared fully at the outset of the course and at the beginning of every class to meet their expectations. Even more than youngsters, adults recognize and respect competence, and they are likewise more intolerant of poor preparation. They will usually recognize the proverbial "snow job" more quickly than younger students, and their reaction to it is likely to be stronger and more direct. Whatever form their reaction takes, making adults feel their time is being wasted is inevitably fatal to learning.

Adults, on the other hand, are realistic enough not to expect superhuman performance from their teacher. They have seen enough of life to know that no one has all the answers, and they will respect the teacher who frankly admits when an unexpected question stumps him. And their respect will solidify when the teacher seeks out, or joins them in seeking out, the answer.

In preparing for his course the adult teacher will find the full resources of the university at his disposal. Administrators, subject-matter supervisors, and full-time colleagues on the faculty are always available for advice and assistance. Other teachers who have taught the same or similar courses may have valuable suggestions as well as course outlines, texts, bibliographies and instructional materials.

The first step is to go over the course outline or if none exists, to construct one. This outline and the textbook will establish the framework and the content of the course. The librarian for Continuing Education will help with reference books; the administrator will assist in obtaining instructional materials and equipment.

More generally, university catalogs and bulletins will reveal the philosophy and purposes of the institution and show where this particular course fits into the total program.

MAKE A GOOD START

The teacher faces a crucial test at the first class meeting. First impressions are persistent, and since students share impressions, they

may become contagious. If the first impressions are bad, they may become terminal, and a high mortality rate in the class during the next few sessions is the likeliest result. Solid preparation is the best preventative against this melancholy outcome, but more immediate details will require attention, too.

Start by being on time for the first meeting. Better yet, be on hand early for that class, and for all subsequent classes. Students will appreciate a private moment with you to resolve some individual problem, and beyond that a few pre-class minutes devoted to developing easy personal relations with your students will pay off handsomely once the class has formally convened.

For the same reason, you should make yourself available to your students for a few minutes after the class is over. Even among the best of teachers and the most attentive of students there are always dangling questions about points covered in class, homework assignments, term papers, and so forth.

When the first class begins, introduce yourself and have the students introduce themselves. Tell them how and when to get in touch with you between classes if they need advice or assistance, and agree with them on the ground rules by which you will conduct future classes. And in deciding on those rules, remember that adult students typically have other major concerns of job or family that take priority over their course work. Adult students are usually part-time students who will not have unlimited time, for example, to devote to homework. If homework is necessary, assign it — but be reasonable. With evening students especially, remember that most of them will have a full day's work behind them when they arrive in your classroom. It is part of your responsibility as a teacher of adults to allow for their fatigue at the end of the day. Give them a "break" if the session is much more than an hour long, and change pace and direction frequently to keep them alert and learning.

Depending on the nature of your course, it may be worth taking time to brief your adult students on note-taking. For example:

1. Follow a logical outline arrangement:
   - A. .....
     - 1. .....
       - a. .....
   - B. .....
     - 1. .....

2. Omit unimportant details.
3. Transcribe direct quotations accurately.
4. Listen carefully.
5. Amplify and rework your notes after class — before they get "cold."

Once you have dealt with the administrative details of the first class, get on with the work of the course. Your students probably will not have prepared a lesson, so you should prepare a lesson which will introduce the nature and scope of the course, fit it into their previous experience and other course work, and indicate both its immediate utility and its implications for future learning. Above all, the first lesson should make them want to come back for more.

KEEP IT UP

When the students do come back for more, remember that each session of the class presents a new challenge, requiring continuing preparation and continuing adjustment — no matter how carefully you plan your work in advance, you will inevitably find your students running when you expected walking, dragging their mental feet where you looked for speed, and striking out on profitable but unanticipated tangents.

Good preparation will pay off most of all when the unexpected occurs. Every class develops a personality and a will of its own that you must be flexible enough to accommodate in reasonable degree. Otherwise, you may be reduced to "telling it to them like it is" whether they are ready to hear it or not, and little learning will result. As in boxing, you'll need a fight plan to go the full 15 rounds, but you'll have to stay light on your feet to get through each round in its turn.

Come to know your students as individuals as soon as possible. Associate their names and faces, by the second meeting, if the class is of reasonable size, and don't hesitate to use place cards or a seating chart to aid your memory. But don't stop with names alone. Pay attention to the students as individuals in every class, keep updating your estimate of their individual strengths and weaknesses. They will recognize and respond to your interest, and you will acquire an increasingly reliable awareness of to whom you are talking and what they are prepared to understand.

Opening each class after the first with a brief review of the

preceding lesson is sound teaching technique, and it has the added practical advantage of allowing latecomers to find their seats before you forge on into new territory. To encourage promptness, you should begin each class promptly on time, but with adult students it's wise to allow for the rush-hour traffic jam or domestic emergency without wasting the time of students who have arrived promptly.

METHODS OF TEACHING

There are many ways of teaching, each with its own advantages and disadvantages. The skillful teacher employs a mixture of all the methods, striving to get the advantages of each and to minimize the disadvantages. The purpose always is to facilitate students' learning, and the teacher's choice of method or methods will always be dictated by that purpose.

PROBLEM-SOLVING

Psychologist Lee J. Cronbach has written that "in one sense, all behavior is problem-solving, for one must select appropriate responses and usually modify them to fit the immediate situation."

When a person knows how to solve a problem deliberately without a series of trial-and-error procedures, we say he can reason. It is this ability to reason the teacher wants to help the student develop. He will provide the student with as many different problems in as many problem-solving situations as he can. Reasoning, like any other skill, improves with practice.

And reasoning does not mean merely assembling facts. Facts are, indeed, the raw material reason works in. But learning facts for which he has no use simply wastes the student's time. The essence of reason itself is applying principle to solving problems.

Principles are, of course, derived from facts, and their successful application usually generates new facts. To learn, a student must certainly acquire information, but if his learning stops there, stops short of putting the information to work in solving problems, it stops far short of the teacher's true goal. The problem, then, provides the best tool for teaching — and the most rewarding opportunity for learning.

The challenge of the problem offers the student the best chance of learning precisely because it is a challenge. Often, he may not

completely grasp the principle involved nor fully possess the information needed to apply it when the problem is presented. But if he knows enough to perceive the problem, he knows enough to get started, and the teacher should not delay. Consciously or otherwise (but always very humanly), the student will often defer learning something new until he sees a reason for undertaking the labor. The challenge of the problem, and the opportunity it presents to command a new skill, provides the needed incentive. The learning that results is likely to be both quicker and more permanent.

Many students will profit from some explicit instruction on how to go about solving a problem; the teacher should not hesitate to offer it. The process can be broken down into seven steps.

1. Defining the problem.
2. Breaking the problem down into logical and convenient working units.
3. Gathering all the available data that are pertinent to the problem.
4. Making a tentative solution.
5. Testing out the soundness of the tentative solution.
6. Reviewing the solution in the light of the test and correcting it where necessary.
7. Formulating the solution into a principle that will be useful in solving similar problems.

This break-down can be offered to students not just as a technique for solving the problems the teacher will present but, more generally, as a way for solving many kinds of problems — as a recipe for learning. These are, in fact, the basic steps in the scientific method, the discipline that has produced most of the information we possess today about the world and the people in it.

There is, however, a serious pitfall in applying this method of solving problems, and students should be warned about it: we often must solve problems on the basis of incomplete or ambiguous data. The scientist may be able to choose to work only at problems for which he can obtain adequate data, or he may choose to defer a solution until a means for obtaining the data becomes available. But necessity frequently demands immediate solutions to problems we don't choose for ourselves, and the demand is not always accompanied by as much information as we might like to have in

attempting the solution. In such cases, the method remains valid, but the validity of the solution arrived at must be evaluated in the light of the incompleteness or ambiguity of the data. Students should understand — and they don't always — that the answer of the moment, even when it is methodically developed, is not necessarily either the best or the final answer to the problem. While it remains the only answer, however, we must often act on it anyway.

But this realization should neither discourage the teacher from using problem-solving in his classes nor weaken the students' trust in the method. Ambiguity is a fact of life. Therefore, problems and judgment in evaluating and acting upon the solutions are equally important aspects of the learning experience.

DISCOVERY

The discovery method is closely related to problem-solving. It differs chiefly in that the teacher doesn't identify or define the problem. Rather he creates or places the student in a situation where the student can perceive and formulate the problem for himself. Instead of applying a principle developed for him by the teacher, the student must sort his own way through the problem situation, devising the principle for himself as he solves the problem he has perceived.

For example, the teacher who wants his students to learn the principal of the arch in building may show them a picture of an arch and ask them how it manages to bear its load. Better yet, he may take them to an actual arch. Best of all, perhaps, he may provide them with the disassembled components of a small arch and invite them to assemble it themselves. But when he has presented the students with the raw materials of the experience, the teacher stands aside while the students instruct themselves.

The advantages of the discovery method are that it engages the student basically and actively in the learning process, and provides him with the motivation that proceeds from the thrill of discovering for himself on his own initiative. The more completely the student participates in the learning process, the longer he is likely to retain what he learns, because it evolves directly into his own experience and becomes part of him. And discovery is rewarding because the student's perception of the problem generates a psychological tension, a sense of disequilibrium, which he can relieve by

achieving the solution. His anticipation of that relief is a powerfully motivating factor, and motivation is at least half the game in learning.

There are also, some disadvantages to the discovery method. It is time-consuming; it ordinarily cannot be used as teacher's only teaching technique or even his principal one. Effective as discovery can be in promoting learning, the teacher must reserve it for occasions of relative importance as well as for circumstances that are appropriate. And those circumstances will vary widely with subject matter or with specific topics within a subject-matter area. In general, the more abstract the subject — the more removed the problem situation is from the concrete world of sensory experience — the less effective the discovery method becomes.

Then, too, the discovery method sometimes misfires. Students will occasionally fail, even with the teacher's guidance, to perceive or define the problem accurately. Sometimes, even when they have successfully formulated the problem, they fail to find the solution, or worse yet, they find the wrong solution. And the wrong answer may have more serious consequences with the discovery method than with other ways of learning, precisely, ironically, because discovery tends to elevate motivation so high. If the student satisfies himself with a wrong solution, the resulting relief of tension may be so rewarding that he will firmly and persistently learn the wrong thing and thereby double the teacher's work.

As with all teaching methods, then, the teacher should employ discovery only after weighing its pros and cons in the light of the particular learning he wants to foster. It may seem worth the time and the risks, for example, in a vocational education course where students are dealing directly with the physical world. But the scales may tip the other way for, say, a course in theology or subnuclear physics. The teacher will have to judge.

QUESTIONING

Questions also provide the teacher with a most effective means of stimulating learning, of diagnosing student difficulties, and of measuring student achievement. The questions a teacher asks in the classroom or on an examination may serve one or all of these purposes — but the first requirement for useful questions is that the teacher know why he is asking them. Good questions spring

from the teacher's knowledge of his subject, but they find their mark from his awareness of the objectives he wants them to achieve.

The teacher of adults will find that questions which are not good will usually generate their own not-always-comforting replies: foolish questions will get the kind of answers they traditionally deserve. The rhetorical question, which really expects no answer since the answer is supposed to be obvious, can be dangerous, too. If the answer is not, in fact, obvious to the students, they may reach conclusions contrary to the one the teacher intended!

Dr. Frank A. Butler has developed a thoughtful guide to the purposes questions may serve:

1. To change viewpoints.
2. To bring out cause-and-effect relationships.
3. To develop new ideas.
4. To promote understanding.
5. To apply information.
6. To stimulate thinking as a logical process.
7. To develop appreciations, ideals, and attitudes.
8. To discover the status of group or individual learning.
9. To create mind-set.
10. To test for objectives sought.

Such a latitude of purposes gives the teacher room to formulate his questions as the needs of the course and the flow of classwork demand, but having some specific purpose remains a prerequisite for effective questions.

Purpose alone, however, will not assure asking good questions — there is also an element of skill involved in questioning. Questions can be classified into types, and the teacher can learn how and when to apply them.

1. *Types of questions*
   a. *The memory-checking question*: This type of question asks "who, what, when or where" or directs the student to "define, describe, name, state or enumerate." The purpose is to appraise learning of facts, formulas and principles. These questions are useful for review, but they should be used sparingly.
      Example: "What is the formula for finding the area of a trapezoid?"

b. *The drill question*: Drill uses repetition to fix important facts in memory.

Example: "State Ohm's Law in the form of an equation."

c. *Questions which induce the student to think*: Questions asking "why or how" or asking the student to "explain, compare, analyze or interpret" help the student to understand the significance of what he has learned. This is the problem-solving approach that requires the student to apply reason, and such questions should be used more than any other type.

Example: "Why is flux used in welding rods?"

d. *Questions which help the student associate his own experience with the subject matter*: The wise teacher always draws upon the pertinent experience of his students. New information integrated into the student's previous experience is learned faster, retained longer, and understood better.

Example: "Mr. Johnson, how is the thermocouple used at your coke plant to control the temperature of a coke oven?"

e. *Questions which stimulate interest and enthusiasm*: Successful teachers use questions to transfer their own enthusiasm for a subject to the student. Such questions may clarify a main point or direct the student in attacking an assignment, but they will always make the student eager to discover the answers because they give him a chance to demonstrate his command of what he has learned as well as to illustrate its usefulness.

Example: "Not long ago, I heard a story about a submerged submarine ramming a wrecked ship that was floating beneath the surface of the ocean. I questioned the story. In fact, I knew it couldn't be true because it violates the principle of science we are studying. Can *you* show, by applying Archimedes' principle, that the story was false?"

2. *Constructing and Using Questions Effectively*

When the teacher has decided to ask a purposeful question — when he knows what he wants the student to learn by answering the question — it remains for him to put the question in a form the student can readily manage.

To begin with, the question should be framed in informal, conversational English suited to the ability of the class as well as to the subject. The right words should be used, and not too many of them, especially when the question is posed orally. Simply-stated straightforward questions, posed one at a time and aimed at specific answers, are best. But the question should not permit a yes or no answer, particularly when it is intended to measure what the student has learned, because he has a 50-50 chance of answering correctly, even if he has not studied the lesson. Except for drill, in fact, one-word answers are best avoided altogether. The student will learn more and reveal more about his learning if he is trained to respond with fully developed answers. (Asking for complete answers, of course, means allowing the student a reasonable time to formulate his answer, but it's time worth taking.)

Even while he is testing the student's knowledge, the teacher should keep the student's feelings in mind. Embarrassing a student who doesn't know an answer is likely only to make it more difficult for him to answer the next question he faces. A cheerful, reassuring manner in asking the question, and an air of confidence in the student's ability to answer, will engender confidence in the student himself — and produce better answers.

When the student returns only part of the desired answer, or an answer that is only partly correct, the teacher should salvage as much of that student's answer as he can, and then get even more mileage from the question by asking another student to complete or supplement it. In any event, the students should be encouraged to be impersonally critical of each other's answers.

To make most effective use of his questions, the teacher must avoid falling into a dialog with the student or students who answer most readily or most correctly.

The student who is hesitant or who has not achieved command of the subject needs the teacher's help more than the student who is always ready with the right answer. Over a period of days or weeks, the teacher should distribute his questions reasonably evenly throughout the whole class, but he should distribute them randomly, not according to any fixed pattern.

To provide the best possible environment for questioning, the teacher must be as ready to accept questions as to ask them. Students should be encouraged to ask pertinent questions whenever they think of them. The teacher should usually place such questions before the class to answer, though he may need to answer some himself.

In one way or another, every legitimate student question should be dealt with. If it is pertinent, and the answer is available, it should be answered at once. If it is not relevant to the particular aspect of the subject under discussion, the answer may be deferred to a more appropriate moment; if it is not relevant to the subject at all, the teacher should explain, gently, why it is not.

When a student asks a pertinent question to which the teacher does not know the answer, the teacher should confess, frankly and without embarrassment, that he does not know but will find out. The next time the class meets, he should be ready with the answer. The defensive reaction that produces the classic "snow job" or an answer that can't be backed up has no place in the teacher's make-up. He and his students should understand that they are engaged in a mutual venture in learning where there is no sin in not knowing an answer but only in not trying as hard as possible to find it out. Such an understanding does not ease the teacher of his obligation to be competent in his subject, but it does relieve him of any temptation to play God in the classroom — a pose that students, especially mature, will instantly see through anyway.

OTHER TECHNIQUES

1. Class Discussion

Discussion marshalls the thinking of a whole class to solve a problem jointly. Together, all the members of the

class participate in achieving the solution and, at the same time, clarifying their own thinking. Guiding the discussion toward the solution, and helping that clarity emerge, call for all the teacher's skill in managing the group.

There are at least four factors the teacher should consider in deciding whether or not to employ class discussion:

a. The problem must be one upon which most of the class have some information or experience.
b. The problem must be of some interest to members of the class.
c. The solution to be arrived at or the decision to be taken must be of critical importance to the subject matter and the progress of the course.
d. The matter to be discussed should allow differences of opinion on a body of agreed fact so that members of the class have a chance to exercise their judgment.

The teacher can initiate the discussion with a question—like "Should government censor books, plays and films?" — or he can stimulate discussion with a topic presented by pictures; motion pictures, slides or film strips; bulletin-board displays; news items; tape or disc recordings; objects brought to class; or visiting speakers.

However it is begun, the discussion should aim at a solution that all, or most, of the group can accept.

The teacher's role is to keep the discussion moving by returning questions to the group, by directing phases of the discussion to various members of the group, and, from time to time, by showing the group where they are. The latter is especially important, — it will help the group to progressively define the problem, to clarify the major issues, and to direct themselves more pointedly toward the solution.

The virtue of discussion is that the participants feel the conclusions they reach are their own. People make attitudes or decisions really their own only when they have a chance to work them out for themselves.

2. Lecture

The lecture has been the dominant method of teaching in higher education for centuries, but in recent years edu-

cators increasingly have challenged its effectiveness in helping students learn. One professor has gone so far as to call it "the method by which what's in the professor's notebook passes to the student's notebook without passing through the mind of either." That judgment may be a bit harsh, but there are obvious limits to how much and how well the lecture can stimulate learning.

When the teacher does all the talking in the classroom, the student has little opportunity to develop his own thinking — that is, his ability to organize information and bring it to bear on a problem. Too often the lecturer benefits by preparing his lecture, while the student merely memorizes facts or opinions he will later regurgitate, half digested, onto the page of an examination book. Such a system will test the student's powers of memory, but it will do little to integrate what he has "learned" into what he already knew. The student is likely to emerge with a set of conditioned reflexes rather than a greater ability to reason. Telling, unfortunately, is not teaching.

This is not to say that the lecture has no value at all. There are instances where it is perhaps the best technique to use. It can save time — the lecture is certainly the fastest way to present information not conveniently available in printed form. (Saving time, however, presents the teacher with his greatest temptation to lecture — and he may end up saving time at the expense of learning). The lecture is effective for summarizing or reviewing — when the ground has been covered by discussion, problem-solving, etc., the lecture can show how to fit new information into a framework that will help integrate and retain it.

But the lecture is best, perhaps, for motivating and stimulating students — because it offers the teacher a platform from which to display to his students the enthusiasm he himself feels for his subject. A lecturer can't help exposing himself to his listeners, and the more honestly and unreservedly he does so, the more likely they are to catch his fire and warm to their own learning of the subject. But even this virtue of the lecture reflects its own vice; while enthusiasm enhances learning, it's no substitute for

learning. The best bet is to use the lecture when its advantages are clear, but to mix it liberally with discussion and whatever appropriate teaching aids (maps, charts, films, slides, recordings, etc.) may be available. The students, after all, have a stake in the proceedings, too. If they can't talk back, they may decide not to listen either.

When the lecture does seem in order, the teacher should take some care in how he presents it. Several factors are worth considering:

a. The lecture should be well prepared and organized — but, in most cases, it should not be read out word for word from a written text. Effective verbatim reading requires an unusual measure of theatrical talent and experience to hold the attention of a class. Most students, quite rightly, would rather have the material duplicated for them to read at their leisure and discuss in class. When reading a passage word for word is required, the teacher should keep the passage as brief as possible, and rehearse it thoroughly aloud beforehand.

b. The lecturer should speak clearly in informal, conversational English. He should remember always that the spoken word must be more redundant than the written if he wants it to be remembered — repeating key points is not merely advisable; it's essential. And he should remember, too, that even the lecturer is a two-way communication. His listeners will constantly feed visual and sometimes audible signals back to him that will tell him how he is being received and how he needs to adjust his remarks to the response he is getting.

   In short, he must remember he is talking to people and that he must continually take them into account if the lecture is to achieve its objective. The lecture is, after all, a kind of formal conversation — and it takes at least two to make a conversation. Otherwise the lecturer may be talking simply to himself.

c. The lecturer should take advantage of any instruc-

tional materials that lend themselves to his purpose. The chalk board and other visual aids are particularly useful in reinforcing the spoken word.

d. The lecturer should try to subdue especially noticeable mannerisms that may distract his students, but even more he should avoid being distracted himself by his own footwork. Inexperienced lecturers, particularly, may be highly self-conscious about how they look and sound to their classes, and that self-consciousness sometimes tempts them into the extremes of either exaggerating or artificially restraining their vocal expression, facial expressions, and body movements. Irritating as some nervous mannerisms may be, "elocutionary" tricks that are too obviously calculated will be even more distracting to both the lecturer and his listeners.

Fortunately, the lecturer can avoid these difficulties by the simple expedient of concentrating on what he's trying to accomplish, to whom he's trying to say, and what he wants to accomplish by it. Words, vocal expression and movements of face and body are all tightly coordinated in the way we ordinarily talk. The lecturer who knows what he wants to say and passionately desires to communicate it to somebody for some clear purpose will find he has neither time nor any need to worry much about how he looks and sounds. And neither will his students.

3. Buzz Sessions

"Buzz" or "huddle" groups are used to attack problems which can be considered in a short time.

The teacher can divide the class arbitrarily into groups of roughly equal size after a problem has been clearly defined, perhaps by a lecture. The group will usually organize by choosing a chairman and a secretary or reporter, if one is required. The chairman sees that each member has a chance to be heard. The members of the group may be encouraged to write down points of agreement and disagreement, questions, and a summary. At a pre-arranged time, the teacher asks that conclusions be drawn. Then

the class re-assembles and the reporters present their groups' progress reports and conclusions to the class.

4. Brainstorming

   Brainstorming has been described as "giving the mind the green light." In these sessions, usually also conducted in small groups, all ideas on a topic are accepted — none is rejected. Then, when the brainstorming subsides, all suggestions are evaluated and the group or class decides which are the most useful. The idea of brainstorming is to encourage a free flow of ideas uninhibited by any effort to evaluate until all the ideas on the subject the group can generate have been brought into the open for analysis. Brainstorming has been used in business, especially in advertising, with varying results.

5. Other Group Techniques

   There are other group techniques the teacher may find useful:

   a. Committees
   b. Round-table or panel discussion
   c. Symposium
   d. Debate
   e. Forum
   f. Interview

DRILL AND REVIEW

Every teacher faces the problem of how to make sure his students will remember the things they should remember. Depending on what kinds of things are to be remembered, drill or review may be the answer.

Drill fixes skills, or establishes associations that don't need "thinking through," by intensive repetition. Drill is recommended for learning skills that have been carefully identified as necessary to good performance and economy of time. Intelligently applied drills will help students learn the skills they need as automatic responses.

Extended drills may become monotonous and reduce retention. Brief, well-conceived drills offer the best results. Several suggestions will help in planning effective drills:

1. Motivate the drill — make sure the students know why the drill is necessary.

2. Avoid distractions during the drill.
3. Be certain students understand the drill procedure, so they do not develop bad drilling habits. (This means the teacher must carefully supervise practice at the beginning.)
4. Make the drill as life-like or as much like the on-the-job situation as possible.
5. Show students how to do drill exercises on their own time outside the class.
6. Have each student keep a score card or graph of his progress in learning the skill.

Review, as a learning activity, is more involved than drill. Where drill aims at conditioned response, review is intended to deepen the students' understanding of material already covered in the class. It serves to organize or re-organize what has been learned into logical, meaningful patterns that will help the students retain the information. Review, in this sense, is not merely "viewing again," but rather "taking a second look" at the material for associations, relationships, and meanings not seen the first time around.

The teacher can improve review by developing a procedure for reviewing with the students. For example, when classes meet a week apart, a student may be asked to relate the topic of the previous lesson to that of the current lesson. At the end of the class, the teacher may use questions to draw the lesson or the unit together:

1. What are the main points we have studied in this lesson (topic, unit)?
2. How did we reach this conclusion?
3. How does this lesson relate to what we have learned before?

Problem-solving also offers opportunities for effective reviewing. The teacher can present a problem whose solution will require the class to apply the material in the lesson. Discussing the proposed solutions will, in effect, review the material.

A check-list prepared by the teacher is another possible reviewing device, but perhaps even more effective is having the students present, aloud or in writing, points from the lesson that still trouble them. The resulting discussion will provide the desired review.

EVALUATION

Teachers usually evaluate the learning performance of their students with tests and examinations. (Tests for measuring attitude changes and reasoning ability are generally reserved for research studies.)

Tests may evaluate performance for one or more of the following purposes:

1. To discover weaknesses in learning.
2. To provide a basis for individual remedial teaching.
3. To determine the effectiveness of teaching methods.
4. To help students evaluate their own performance.
5. To determine a grade for the course.

Tests may also serve as learning experiences for students by helping them to review and organize the information they have learned and to identify gaps in that information they need to fill in by re-studying the material.

A good test is valid, reliable, and objective: valid in the sense that it measures what it is supposed to measure; reliable in that it is consistent in its measurements; and, objective in that it will be scored the same way for all students and by different scorers.

In the best tests, the beginning items are made less difficult than the later ones, to encourage students with taste of success and to warm them up to the more challenging questions that follow. The progression of difficulty should be carefully calculated, especially on "objective" tests, so that the average student will score in the middle of the range of scores.

Oral Tests are usually employed (1) to appraise quickly how much of the previous lesson the students have mastered, (2) to introduce and correlate a new lesson with material previously learned, and (3) to summarize the lesson. Skill with the spoken word and ease in speaking before a group will affect the student's performance. As a rule, oral examinations are not used to grade students.

Essay Examinations require students to organize facts and ideas logically within some limited time. The student's skill in handling written language will be a critical factor in their performance on essay questions. The essay examination can be prepared relatively quickly, and it offers some advantages in testing both the students

command of the subject and their ability to communicate it. But the essay examination also has its disadvantages — it covers a relatively limited amount of the subject area being tested, and it takes a relatively long time to score.

In constructing an essay test, the teacher may wish to restrict the length of the response to any single question by limiting each question to one topic. Increasing the number of questions may be necessary to distribute each topic to be covered to a single question.

Scoring essay examinations consistently is always a problem. Just as the student's ability to reason through a problem and organize his answer is called upon by the essay question, so the teacher's judgment is heavily engaged in scoring the answer. To increase the objectivity of their judgments, teachers sometimes use a key for essay examinations: responses to each question prepared in advance, and the tentative point score to be alloted to each.

When he uses a key, however, the teacher must make a generous allowance for appropriate responses introduced by the student which did not occur to the teacher in preparing the key. Some teachers try to enhance their objectivity by grading the same question on all papers at the same time. Others prefer to grade one paper completely before proceeding to the next. Either way, it's always a good idea to re-read all the papers before deciding how to allot the final point scores to the questions on the examination. It's possible, and perhaps even likely, that what the students say on the examination may suggest changes in the teacher's initial estimate of the relative values of the questions.

Objective Tests are short-answer tests using multiple- choice, true-false, completion and matching questions. There is only one correct answer to each question, and the test can therefore be scored "objectively". Moreover, this kind of test standardizes the hurdles the students must cross in completing it, whereas on the essay test the students must, to some degree, formulate their own questions.

Objective tests have certain clearcut advantages: (1) they save time in scoring; (2) they allow more complete coverage of subject matter within the time available for testing; (3) they eliminate the teacher's personal judgment in scoring the answers (though not necessarily in formulating the questions) and produce the same results for all students by all scorers.

In contrasting objective tests with essay examinations, partisans of the essay question often declare that the objective test demands less of the students' organizing and reasoning abilities and nothing of their capacity to communicate their conclusions. It is true that the objective test asks nothing of the students' capacity to communicate (we will consider that matter further later on), and it is perhaps true that the objective test often demands less of the students' reasoning abilities. When the objective test is less demanding in this regard, however, it is usually because the teacher has not taken the time and effort needed to construct a truly challenging test.

At first glance, this difficulty does appear to be a disadvantage of objective tests — and it's true they take longer to construct — but even this drawback can be largely overcome by thoughtfully constructing and applying the objective questions.

The type of question used enters directly into the overall effectiveness of objective testing. All in all, the multiple-choice question is probably the best vehicle for this kind of testing. True-false questions lend themselves conveniently to class quizzing and reviewing, but they are poor measuring devices since the odds are that at least half the anwers will be correct even if the students have learned nothing of the subject. Completion questions challenge students less because they give cues to the correct answers, and matching questions raise scoring difficulties because the probabilities of answering them correctly are complex.

With the multiple-choice question, the teacher can control the range within which the student must respond and the probability of correctness by arranging the possible responses along a scale of correctness in, say, five fairly equal steps from the absurdly incorrect to the most completely correct. Such an arrangement does assure the students a 20 percent advantage toward the correct answer but it does not affect the ranking of the students' performance on the test. (And the patently absurd response offers the teacher a much-needed opportunity to inject a touch of humor here and there — there's no need for tests to be as solemn as most of them are!)

It is best to plan an objective test so that all students can be expected to answer every question within the time allowed. (An average of one question per minute or slightly higher will probably be about right.) Such a plan does permit the students to guess at answers they don't know, but with five-part multiple-choice questions

that include one obviously wrong answer, the guesser has only one chance in four of guessing correctly and the overall results should not be greatly affected. On the other hand, if students answer only the questions they think they know and leave others blank, the test will no longer be standardized over the whole class — each student will, in effect, make up his own test.

A typical set of instructions for an objective test might go as follows:

1. Answer every question on this test, guessing if necessary. There will be no penalty for incorrect answers; the test will be scored according to correct answers.
2. Scan all the questions on the test before answering any, and answer the ones you're sure of first, leaving the more difficult ones until last.
3. Read over *all* the responses to a question first before choosing the one which seems most nearly correct.

The test should be duplicated and copies handed to every member of the class before any is allowed to begin. The teacher should answer any questions the students ask about how to complete the test; but if the directions are clear, such queries will be few.

No multiple-choice question should suggest the anwer to any other question on the test. The teacher should avoid, therefore, developing any pattern of which position among the five choices the correct answer is likely to occupy, and he should probably not group questions according to topic. A random scrambling will make each question function independently and maintain the reliability of the test as a whole. But, also to keep the test reliable, there should be about an equal number of questions on each topic to be covered — meaning especially that the teacher should pace himself so as not to have too many questions on the early topics in the test and too few on the final ones. Such an arrangement will consistently test the students' command of the full range of the material (which, by the way, is often a problem with the essay test's limited coverage).

Tests should be returned to the class promptly, with ample time to discuss them, but since objective tests take so much time to construct, they should not be left in the students' hands longer than it takes to review them. That way the teacher can safely reuse the test with other classes, and analyzing the results of every

re-application of it will allow him to refine it into a progressively better measuring instrument. Re-use of the test will also protect the teacher from exhausting his material — a given body of information can generate only so many valid questions.

Applied in this way, tests are primarily measuring devices rather than learning experiences. The students will learn something from their brief review of their performance on the test. But even here the teacher must be cautious, because students, often forgetting that even the relatively detailed objective test only *samples* the information that was to be learned, sometimes leap to the conclusion that the correct answers are *the* things they should have learned. The teacher is, perhaps, best advised to devote his classwork and assignments to cultivating the student's learning and to depend on examinations chiefly for measuring that learning.

Standardized Tests that measure achievement in various subjects may be purchased. These tests are useful for diagnosing learning problems and for measuring achievement against some standard external to the course, but they are not intended to be used as the only instrument for measuring how much the students have learned in the course.

COMMUNICATION SKILLS

Part of the issue between essay and objective tests is the question of what role the student's communication skills should play in his overall performance in a course and in evaluating that performance. On the one hand, it seems true that individuals vary measurably in verbal aptitudes, their ability to express themselves readily in words, either spoken or written. And it is also true that some students who can use the spoken language reasonably well do not exercise the same general command over the written language. Such students would seem to enjoy some advantage over their classmates, especially in courses whose content is for the most part verbal.

On the other hand, there also seems to be some relationship between verbal ability and general intelligence as well as between verbal ability and achievement. Since most formal learning situations are largely linguistic in nature, it is difficult to sort out these relationships between communication skills and learning. Further complicating this already ambiguous circumstance is the fact that successful on-the-job application of much that students learn in adult

education courses is likely also to depend heavily on their ability to effectively communicate to others what they have learned. Both the lawyer and the shop foreman, for example, will apply what they learn largely by communicating with other people through both the spoken and written language.

Teachers differ in their preferences for either the essay or the objective test, probably according to how they rate the importance of verbal ability in learning and applying their subjects. And there is little doubt that subjects do vary in this regard. To cite extreme examples, courses in creative writing and sculpture would assign significantly differing importance to the student's ability to express himself verbally. But between such extremes there lies an enormous middle range where the teacher may find both objective and essay tests in order, where he may wish to measure both how much the student has absorbed, and how well he can communicate it to others.

The exact proportions this combined evaluation will assume is a matter each teacher or each subject-matter area will have to decide for themselves. Besides the essay examination, of course, the teacher has the option of assigning papers to be prepared outside of class for assessing skill in written communication. And he can obtain estimates of students' ability to use the spoken language by asking oral questions in class and assigning oral reports for classroom presentation.

Whether he is concerned with the students' ability to use either the spoken or written language, or both, the teacher will probably discover that many of his students can profit by some coaching in organizing material for exposition in oral and written reports, term papers, and essay examinations. One model of exposition (which is at least as old as Aristotle) looks like this:

MODEL FOR EXPOSITION

I. Introduction
   - A. Topic
   - B. Scope
   - C. Background
     1. to prepare reader to understand material
     2. to provide reason for exposition

D. Preview
    1. outline (in paragraph form) of major sub-topics in order to be presented

II. Discussion (Body, Argument)
    A. Sub-topics presented in order previewed

III. Conclusion
    A. Review
        1. summary of major sub-topics in order presented.
    B. Conclusions
    C. Recommendations

It should be made clear to students that this is a model to be adapted only, not a recipe to be followed slavishly in each and every case. The nature of the material and the audience intended, as well as the purpose for which the exposition is meant, will always suggest adaptations of this basic model.

For compositions of any length, it may be worthwhile emphasizing the value of previewing and reviewing. The preview gives the reader a guide to what's coming and helps him summon his own pertinent experience to partake in the communication. The review refreshes the reader's impression of the overall structure of the presentation and provides him with a framework into which he can integrate the details he has been offered. Such a summary greatly increases the likelihood that the reader will accept the writer's conclusions and act upon his recommendations.

This model for exposition is hardly unique — in fact, it's an elaboration on the axiom long familiar to public speakers, "Tell 'em what you're going to tell 'em; tell 'em; then tell 'em what you told 'em." — but the teacher will discover many students who have never been introduced to it. Their written work, on examinations and term papers alike, will benefit by the introduction.

TEACHING MATERIALS

Every teacher wants to excel in teaching. To excel he must make skillful use of whatever learning materials may be available to him. Formal education is conducted largely in abstract terms, using verbal and numerical symbols. Words and numbers are obviously necessary to bring into the classroom aspects of experience

and the universe which would otherwise be inaccesible to the students, but the wise teacher remembers always that people learn best through direct experience of reality itself. With learning materials, the teacher can add a realistic dimension to the largely abstract activity of the classroom.

The advantage of learning materials, of course, is that they help students learn better, not that they lessen the teacher's work. Quite the contrary. To gain the real benefits of learning materials the teacher will have to prepare them carefully and fit them appropriately into his teaching. But the teacher's added labor will be repaid by the students' added motivation, interest, and attention — in short, by more effective learning. In addition to preparing the materials, the teacher will need to prepare the students before presenting the materials, and follow-up discussion will be essential to be sure the students successfully relate the materials to the objectives of the course. The plan's the thing (as Shakespeare almost said); when appropriate materials are properly planned and presented, learning is enhanced.

Books and other printed matter are the most common learning materials; the textbook is the instrument most often used in the classroom. When no textbook is available for a course, several books may be used instead (often from the ranks of inexpensive but excellent paperback editions).

When appropriate, the teacher should encourage students to consult related readings and reference materials. Books may be reserved in Commonwealth Campus libraries of the University. Continuing Education employs a full-time librarian on the University Park Campus who will supply limited reference materials, if available, upon request. He may also work out an arrangement with the teacher's local library.

LESSON PLANNING

The teacher will get the most into, and his students the most out of, the class that is carefully planned. The period of a class consists of a limited number of minutes or hours, which should be too precious to both teacher and students to be wasted. The lesson plan makes the best bargain for both.

The lesson plan itself evolves out of a sequence of increasingly more specific plans.

The teacher takes the first step in the planning when he prepares an outline or syllabus for his course. Here he must take a comprehensive view of the subject matter on which the course is based and of the purposes it is intended to serve. These are the understanding, skills, and attitudes he hopes his students will acquire. When he has settled on his objectives and on the general direction required to arrive at them, he is ready for the next, more detailed step of breaking the course down into units.

A unit should be organized around aspects of the students' own experience that will help them relate to and work their way into the new areas of learning the teacher will lead them to. Once he has framed the course in such units, the teacher can assemble into each unit the teaching techniques and the learning situations and devices that will most effectively tap the areas of the students' experience he wants to take advantage of.

The last step in course planning is the formulation of the plan for each individual lesson. Here, in addition to the subject matter and purposes of the course, the duration of the class will help determine the plan. Each lesson should be devoted to a modest number of specific objectives that the teacher can realistically expect to cover within the allotted time.

The lesson should be outlined in sufficient detail to assure presentation of all the information pertinent to the objectives the teacher wants to reach.

The lesson should begin with a reminder of the material covered in the previous lesson and an introduction to the topic or topics the teacher intends to deal with in the lesson at hand. This logical connection will be important to the students, but it will be equally important for the teacher to introduce the new material in a fashion that demonstrates its utility to the students and motivates them to learn it. Samples of proposed questions and answers will serve the teacher as a checklist to make sure he covers all the facts he wants to cover in the order he wants to cover them, and he should be prepared to summarize the lesson to help the students fit the new material into the larger framework of the course and fix it in their memories. Finally, he must allow enough time at the end of the class to explain the assignment for the next class period carefully and completely.

The assignment will have to be planned with as much care as the lesson itself:

1. First the teacher must determine what the student should know and be able to do when he has completed the assignment.
2. Next he must make the purpose of the assignment clear to the students and give them specific goals to aim at in doing the assignment.
3. Interesting illustrations or challenging problems will aid in introducing the assignment and in motivating the students to complete it correctly.
4. In making the assignment, the teacher must provide the students with any background they may need to complete it and with detailed directions for accomplishing it. He should take particular care to point out and explain the nature of difficult parts of the assignment that may trouble students.
5. The assignment should be planned so as to tie the lesson just completed to the lesson at which the assignment will be presented.

Such detailed planning of the lesson and the assignment will provide the teacher with the most efficient use of his class time and the most effective means of reaching his students with the material he wants them to learn. But, in most cases, he should not try to plan in so much detail that he ends by simply reading off a prepared lecture to the students. Such a presentation takes an unusual amount of skill and experience to hold students' attention and, even worse, it may rob the teacher of the flexibility he will need when students ask questions, give wrong answers, engage in discussion, or digress profitably from the planned outline of the lesson. An essential ingredient of lesson planning is anticipating interruptions in the plan.

The teacher of adults, who bring mature experience and independence of mind to the class, must expect perhaps even more interruptions than the teacher of children. But the adult teacher, who is secure in his grasp of the subject and firm in his planning, can look forward with pleasure to most of the interruptions his students will make in his plans — they may delay the lesson, but more often will enrich it. Therein lies not only the real challenge of teaching adults but also its abiding reward.

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